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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/593,345	01/10/2007	Michihiko Namba	296543US0PCT	8956

22850 7590 07/09/2008

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EXAMINER	
SHAH, MANISH S	

ART UNIT	PAPER NUMBER
2853	

NOTIFICATION DATE	DELIVERY MODE
07/09/2008	ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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Office Action Summary	Application No.	Applicant(s)	
	10/593,345	NAMBA ET AL.	
	Examiner	Art Unit	
	Manish S. Shah	2853	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *14 April 2008*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-11 and 14-21* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-11 and 14-21* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *4/30/08;5/19/08*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

1. Claims 1, 6, 14-15, 19 & 21 are rejected under 35 U.S.C. 102(b) as being anticipated by Ishibashi et al. (# US 2004/0003754).

Ishibashi et al. discloses: a recording ink comprises: water, a wetting agent, a surfactant ([0071]), and colorant (see Abstract; [0035]), wherein wetting agent comprises 3-methyl-1,3-butanediol ([0047]) and the recording ink is at least one selected from the cyan ink, magenta ink, and yellow ink (see Abstract; [0060]-[0071]). They also disclose that surfactant is selected from anionic, a nonionic surfactant ([0071]).

- An ink cartridge comprising a container and a recording ink contained in the container (see Example).
- An inkjet recording apparatus comprising: an ink ejecting unit by which to a recording ink, a stimulation is applied and the recording ink is ejected for forming the image (see Example).

- An inkjet recording process comprising: ejecting a recording ink by which to the recording ink, a stimulation is applied and the recording ink is ejected for forming the image (see Examples).

- An ink record comprising: an image formed on a recording medium using a recording ink (see Examples).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

2. Claims 2-3, 11, 16-17 & 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ishibashi et al. (# US 2004/0003754) in view of Takashi (# JP 11-323221).

Ishibashi et al. differs from the claim of the present invention is that the wetting agent is any one of (1) a combination of 3-methyl-1,3-butanediol and glycerin and (2) a combination selected from the group consisting of combinations of (i) 3-methyl-1,3-butanediol, glycerin and at least one of (ii) 1,3 butanediol, triethylene glycol, 1,5-pentadiol, propylene glycol, 2-methyl-2,4-pentadiol, diethylene glycol, dipropylene glycol, trimethylol propane and trimethylol ethane ([0021], [0023], [0055]).

- The amount of the wetting agent in the recording ink is 20% by mass to 50% by mass (see Abstract).

Takashi discloses:

- The wetting agent is any one of (1) a combination of 3-methyl-1,3-butanediol and glycerin and (2) a combination selected from the group consisting of combinations of (i) 3-methyl-1,3-butanediol, glycerin and at least one of (ii) 1,3 butanediol, triethylene glycol, 1,5-pentadiol, propylene glycol, 2-methyl-2,4-pentadiol, diethylene glycol, dipropylene glycol, trimethylol propane and trimethylol ethane ([0021], [0023], [0055]).
- The amount of the wetting agent in the recording ink is 20% by mass to 50% by mass (see Abstract).
- The viscosity of the recording ink at 25 C is 5 mPa.sec to 20 mPa.sec ([0027]).
- The stimulation is one selected from the group consisting of heat, pressure, vibration and light (see figure: 7; [0046]-[0047]).
- The stimulation is one selected from the group consisting of heat, pressure, vibration and light ([0046]-[0047]).

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the ink composition of Ishibashi by the aforementioned teaching of Takashi in order to have the high quality printed image.

3. Claims 4-10 & 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ishibashi et al. (# US 2004/0003754) in view of Takashi (# JP 11-323221 and

further in view of Namba et al. (# US 2005/0054751) and Nagashima et al. (# US 2005/0170989).

Ishibashi et al. and Takashi discloses all the limitation of the recording ink except that (1) the colorant is an aqueous dispersion of polymer fine particles comprising a colorant.

(2) The polymer of the polymer fine particles is any one of a vinyl polymer and a polyester polymer.

(3) The surfactant containing fluorine is at least one of compounds represented by the following formula (I):

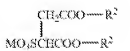
CF3CF2(CF2CF2)m--CH2CH2O(CH2CH2O)nH Formula (I)

wherein "m" is an integer of 0 to 10 and "n" is an integer of 1 to 40.

(4) The anionic surfactant, the nonionic surfactant and the ampholytic surfactant are at least one compound selected from the group consisting of compounds represented by the following formulae (II) to (X):

R1-O-(CH2CH2)hCH2COOM Formula (II)

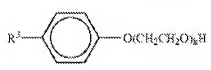
wherein R1 represents an alkyl group; M represents any one of an alkali metal ion, a quaternary ammonium ion, a quaternary phosphonium ion and an alkanolamine ion; and h is an integer of 3 to 12,



Formula (III)

wherein R2 represents an alkyl group and M represents any one of an alkali metal ion, a quaternary ammonium ion, a quaternary phosphonium ion and an alkanolamine,

Formula (IV)

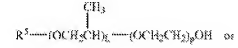


wherein R3 represents a hydrocarbon group and k is an integer of 5 to 20,

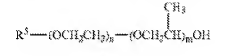
R4-(OCH2CH2)jOH Formula (V)

wherein R4 represents a hydrocarbon group and j is an integer of 5 to 20,

Formula (VI)

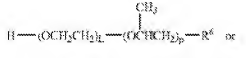


Formula (VI')

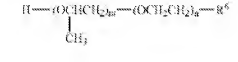


wherein R5 represents a hydrocarbon group and L, m, n and p are individually an integer of 1 to 20,

Formula (VII)

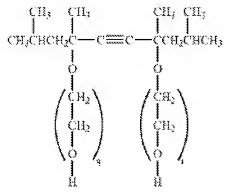


Formula (VII')



wherein R6 represents a hydrocarbon group and L, m, n and p are individually an integer of 1 to 20,

Formula (VIII)

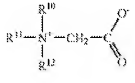


wherein q and r are individually an integer of 0 to 40,

Formula (IX)

wherein R7 and R8 represent an alkyl group or a hydroxyalkyl group and R9 represents an alkyl group or an alkenyl group,

Formula (X)



wherein R10 and R11 represent an alkyl group or a hydroxyalkyl group and R.sup.12 represents an alkyl group.

(5) The recording ink comprises a C8 to C11 polyol compound and a glycol ether compound.

(6) The C8 to C11 polyol compound is either 2-ethyl-1,3-hexanediol or 2,2,4-trimethyl-1,3-pentanediol.

(7) The recording ink is at least one of a cyan ink, a magenta ink, a yellow ink and a black ink.

(8) The nozzle of the inkjet head has a diameter of 30 micrometer or less.

Namba et al. teaches that the recorder which has an excellent ejection stability, and provide good color tone, high image density, and bleed free printed image, the ink composition comprising:

(1) the colorant is an aqueous dispersion of polymer fine particles comprising a colorant (see Examples; [0119]).

(2) The polymer of the polymer fine particles is any one of a vinyl polymer and a polyester polymer ([0123]).

(3) The surfactant containing fluorine ([0102]; [0184]) is at least one of compounds represented by the following formula (I):

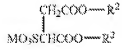
CF3CF2(CF2CF2)m--CH2CH2O(CH2CH2O)nH Formula (I) wherein "m" is an integer of 0 to 10 and "n" is an integer of 1 to 40.

(4) The anionic surfactant, the nonionic surfactant and the ampholytic surfactant are at least one compound selected from the group consisting of compounds represented by the following formulae (II) to (X):

R1-O-(CH2CH2)hCH2COOM Formula (II)

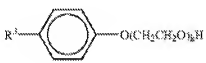
wherein R1 represents an alkyl group; M represents any one of an alkali metal ion, a quaternary ammonium ion, a quaternary phosphonium ion and an alkanolamine ion; and h is an integer of 3 to 12 ([0153]-[0154]),

Formula (III)



wherein R2 represents an alkyl group and M represents any one of an alkali metal ion, a quaternary ammonium ion, a quaternary phosphonium ion and an alkanolamine ([0154]-[0155]),

Formula (IV)

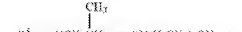


wherein R3 represents a hydrocarbon group and k is an integer of 5 to 20 ([0155]-[0156]),

R4-(OCH2CH2)jOH Formula (V)

wherein R4 represents a hydrocarbon group and j is an integer of 5 to 20 ([0156]-[0157]),

Formula (VI)

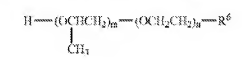


Formula (VI')

wherein R5 represents a hydrocarbon group and L, m, n and p are individually an integer of 1 to 20 ([0157]-[0158]),

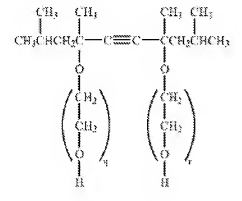
Formula (VII)

Formula (VII')



wherein R6 represents a hydrocarbon group and L, m, n and p are individually an integer of 1 to 20 ([0158]-[0159]),

Formula (VIII)

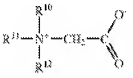


wherein q and r are individually an integer of 0 to 40 ([0159]-[0160]),

Formula (IX)

wherein R7 and R8 represent an alkyl group or a hydroxyalkyl group and R9 represents an alkyl group or an alkenyl group ([0160]-[0161]),

Formula (X)



wherein R10 and R11 represent an alkyl group or a hydroxyalkyl group and R.sup.12 represents an alkyl group ([0161]-[0162]).

(5) The recording ink comprises a C8 to C11 polyol compound and a glycol ether compound ([0172], [0184]).

(6) The C8 to C11 polyol compound is either 2-ethyl-1,3-hexanediol or 2,2,4-trimethyl-1,3-pentanediol ([0173]-[0174]).

(7) The recording ink is at least one of a cyan ink, a magenta ink, a yellow ink and a black ink (see Examples).

(8) The nozzle of the inkjet head has a diameter of 30 micrometer or less ([0091]).

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the ink composition of Takashi by the aforementioned teaching of

Namba et al. in order to have the recorder which has an excellent ejection stability, and provide good color tone, high image density, and bleed free printed image.

Nagashima et al. teaches that to get the high quality printed image, ink composition includes the fluorine compound ([0188]-[0190]), wherein the compounds represented by the following formula (I):

CF3CF2(CF2CF2)m--CH2CH2O(CH2CH2O)nH Formula (I)

wherein "m" is an integer of 0 to 10 and "n" is an integer of 1 to 40 (see Abstract; [0073]-[0082]; see claim 15).

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the ink composition of Takashi by the aforementioned teaching of Nagashima et al. in order to have the high quality printed image.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Manish S. Shah whose telephone number is (571) 272-2152. The examiner can normally be reached on 8:00am-4:30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Stephen D. Meier can be reached on (571) 272-2149. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Manish S. Shah/
Primary Examiner
Art Unit 2853

/MSS/